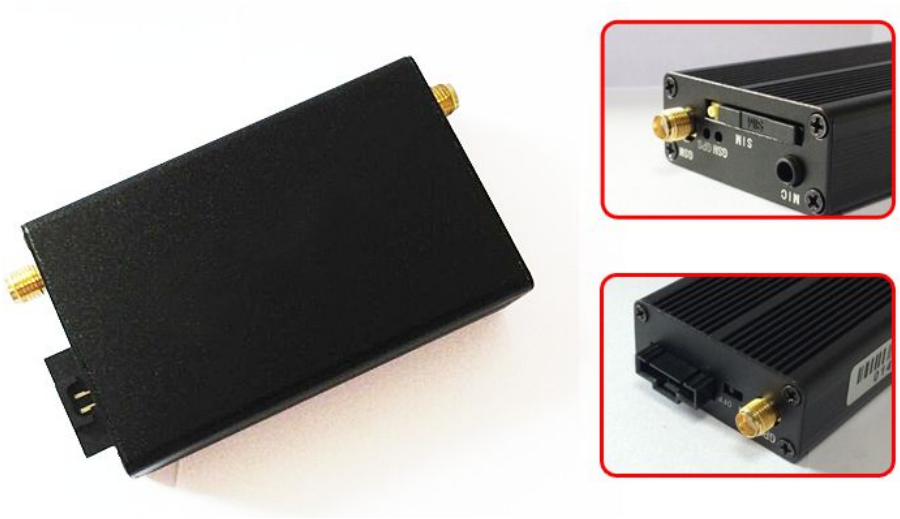

Fleets Vehicle GPS Tracker
TS20 User Manual

(Version 1.0)

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1. Package Contents

Tracker

Wire Harness

GSM antenna

GPS antenna

Immobilizer Relay

Optional Accessories:

Microphone

2. Features and Specifications

Item	Description
Dimension	71*44*18mm
Power range	9-36V DC/1.5A
Working Humidity	5%~95%
Operating Temperature	－30℃~75℃
Internal backup battery	350mAh/4.2V
Data Transmit	SMS/GPRS Communication
GSM chip	FIBOCOM G510
GSM Quad bands	850/900/1800/1900MHz
GPS chip	Skylab GPS Receiver (Sirf III chip)
GPS Sensitivity	-160dB
GPS Position Accuracy	10 Meters
GPRS Null zone data storage	2000 Waypoints
Position report	Time based and Distance based
Alarm alerts	GEO Fence, Speed over, Power tamper and Panic
OTA	Support
I/O Ports	Ignition, Immobilizer, Panic, Door Status detection

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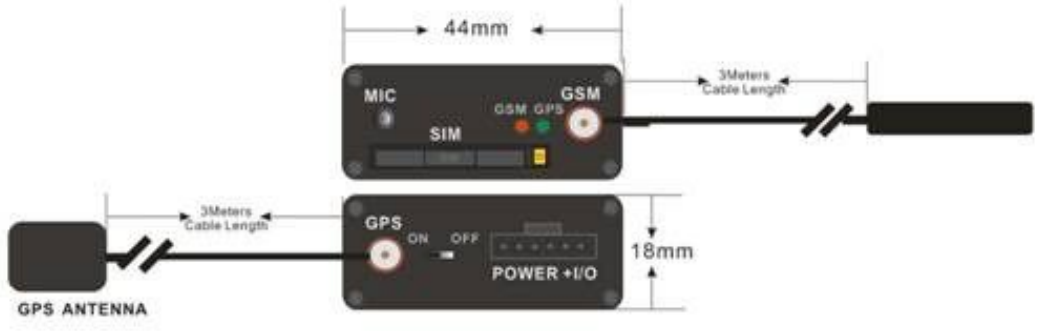
3. Mechanical Size



4. Knowledge before Usage

4.1 Factory Default Setting

- IP/Port: Empty
- APN, User and pass: Empty
- Speed Limit: Off=000Km/H
- Position data Update Time Interval: 60Minutes
- Authorized Phone numbers A/B/C: None
- Device SMS password: 1234

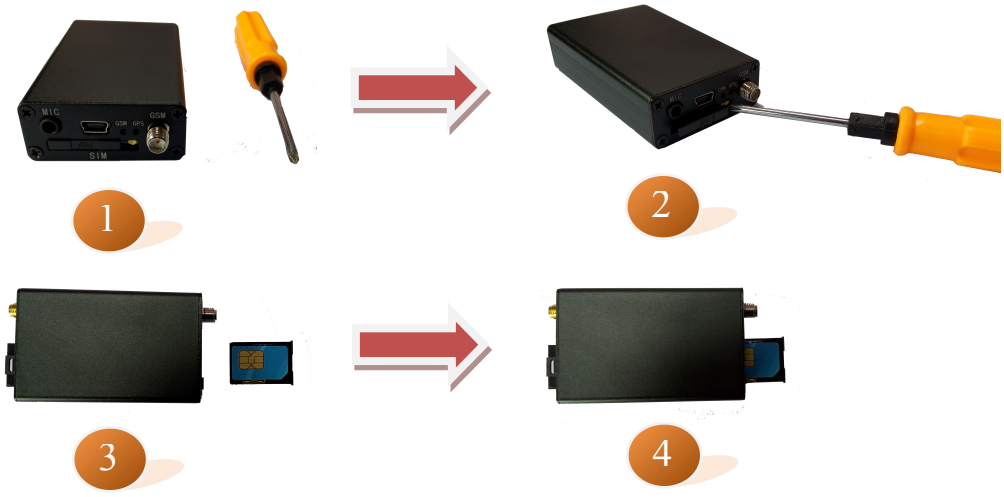
4.2 Power Supply and consumption

This device is expected to connect with a DC power source with range of 11.2-36V DC. Working current maximum 2A input.

In standby mode, device working current < 40mA @12V DC
In sleep mode, working current is less than 6mA @12V DC.

4.3 How to Insert Simcard

Before inserting the simcard, please make sure the simcard SMS and GPRS activated.
Before inserting the simcard, please make sure the device is power off.



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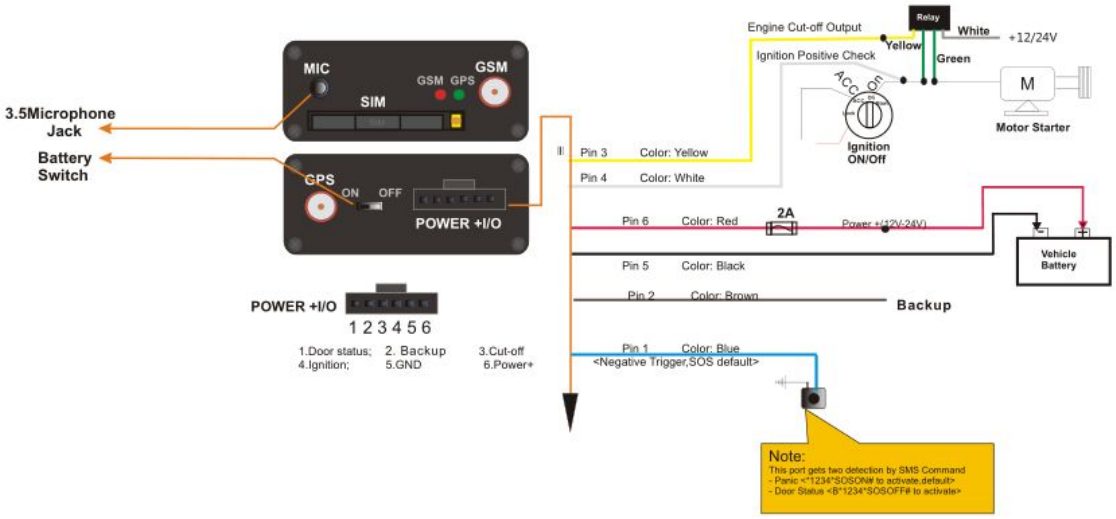
5. Installation

5.1 Wiring Diagram



Item	Pin No.	Wire Color	Remark
Power	5	Black	Power Ground
	6	Red	Power +(12-36V DC)
I/O	1	Blue	Door Status detection(=0V Effective)
	2	Brown	High Trigger Input
	3	Yellow	Cut-off, Digital output
	4	White	Ignition Detection(ACC)

5.2 LED Indication

- **Green Indicator (GPS):**

Blink every second (Off 0.5S, ON 0.5S) >> After Power on, Antenna or GPS receiver is malfunction
Blink every 2Seconds (Off 1.5S, ON 0.5S) >>After Power ON, Searching GPs signal
Blink every 5Seconds (Off 4.5S, ON0.5S) >> After Power ON, GPS position fixed and working normal

- **GSM Indicator (GSM):**

Blink every second (Off 0.5S, ON 0.5S) >> No SIMCARD found, network register failure
Blink every 2Seconds (Off 1.5S, ON 0.5S) >>in registering network
Blink every 5Seconds (Off 4.5S, ON0.5S) >> GPRS connected
Solid ON for 5 Seconds >> Voice call or GPRS data in sending

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6. Device configuration

TS20 allow user to use SMS Commands to configure necessary parameters.
Details please check as follows instruction:

6.1 Configure GPRS Parameter

SMS Command:

`*1234*GPRS:211.154.142.150,9119,T,apnName,apnUser,apnPass#`

Tis data transmit mode. T=1 is using UDP mode. T=0, is using TCP mode. Default as 0.

- Device ID

TS20 doesn't need configure device ID. The device is default using device SN code as ID.

On the unit case side is with a barcode sticker. please use this code as device ID when you register device tracking platform.

6.2 Configure Authorized Phone Numbers for alarm alerts

SMS command:

`*1234*A8613554806820*B13554806821*C13554806822#`

6.3 Change SMS Password

TS20 only will accept SMS command with correct password and correct command format.
The factory default password is 1234.
SMS command:

`*1234*E4321#`

<<1234 is the original password. 4321 is the new password>>

6.4 Time zone Localization Setting

TS20 adopts UTC time as standard system time. In order to get correct Local time in SMS data, please use command to configure your time zone to device.
SMS Command:

`*1234*GMT+/-AABB#`
<AA= Hour, BB=Minutes>

Example: China is in Eastern 8 Zone.
So we need to send command as *1234*GMT+0800# to device.

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7. Functionality and Operation

7.1 Voice Listen-in

By connect the microphone to TS20, it can achieve Voice listen-in feature.
The user can use this function by two methods:

- Authorized Number A/B/C call device in, device auto pickup to activate voice Listen-in

- By send following SMS command to get device call back to you:
`*1234*VMxxxxxxxxx#` <xxxxxxx is call back phone No. for system>

7.2 Remote Cut-engine (Immobilizer)

User can use any phone to send SMS command to cut-off engine immediately by correct Password and command format.
`*1234*Stop#` < Wireless cut-off engine SMS command>
`*1234*K#` <Wireless disable engine lock status SMS command>

7.3 Reset Mileage report value

In every GPRS Position data packet to GRPS server,TS20 data package includes the current travel mileage. And the user can by SMS command to reset or adjust the mileage report value.

`*1234*M:1,115,15000#` <Reset Mileage report value SMS command>

Explain:
1: Unit. =1 Km, =0 Meter. Default=0
115: Different rate, default=100.
15000: Mileage. Default as 0 Meter

7.4 Tracking parameter setting

By following SMS command to setup device data update interval in Moving/Static:

`*1234*E:1,30,180#` <Tracking parameter configuration>

1: Monitoring mode. Define position data update by moving/Static.
30: Position update interval, 30Seconds when in moving.
180: Position update interval, 180seconds when in static

Default setting: 1,30,30. <Update interval cannot less than 10seconds>

7.5 Query vehicle status

TS20 can track location by SMS commands.

SMS command: **`*1234*X#`**
Device reply:
<Unarmed; Engine:On/Off; Door:Off/On;LAC:xxxxxx;CID:xxxxx;Signal Strength:xx
$GPRMC,xxxxxx.xxx,A,xxxx.xxxx,N,xxxxx.xxxx,E,x.x,xxx.x, xxxxxx,,,A*xx >

7.6 Query GPRMC data

SMS command: **`*1234*GPS#`**
Device reply:
<$GPRMC,063231.00,A,2232.64712,N,11355.45466,E,0.581,195.93,050811,,,A*6C>

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7.7 Query Google map Position Link

SMS command: *1234*P#
Device reply:
<2011-12-08 12:32:13,V,60Km/H,Heading:60,LAC:2638,CID:0ECF;
http://maps.google.com/maps?hl=en&q=22.537222,114.020948>

7.8 Recover factory setting

By SMS command or GPRS command, TS20 can be initialized to be factory default setting status.
SMS Command: *1234*V#

7.9 Remote reboot

By SMS command: *1234*Z# <user can reboot TS20 wirelessly>

7.10 Alarm Alerts

TS20 only provide two type alarm alerts. See:

- Power tamper alarm alert < Disconnect TS20 external power to trigger>
- Panic(SOS) alarm alert <By press panic button to trigger>

7.11OTA Operation

TS20 allow user to do firmware upgrading via GPRS connection. Details operation command and procedure, please consult with your seller.

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